January 1949

Test 427: Massey-Harris Model 44K STD

Nebraska Tractor Test Lab
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Department of Agricultural Engineering
Dates of test: September 29, to October 14, 1949
Manufacturer: MASSEY-HARRIS COMPANY, RACINE, WISCONSIN
Manufacturer's rating: Not rated

The Experiment Station
University of Nebraska College of Agriculture
W. V. Lambert, Director, Lincoln, Nebraska

NEBRASKA TRACTOR TEST NO. 427

MASSEY-HARRIS 44K STD.

BELT HORSE POWER TESTS

H. P.	Crank shaft speed R.P.M.	Fuel Consumption: Gal. per hour	Fuel Consumption: H.P. hr. per gal.	Fuel Consumption: Lb. per H.P. hour	Water used Gal. per hour	Temp. Deg. F.: Cooling med.	Temp. Deg. F.: Air	Barometer Inches of Mercury
TEST B—100% MAXIMUM LOAD—TWO HOURS								
38.11	1350	3.774	10.10	0.662	0.00	171	58	28.843
TEST C—OPERATING MAXIMUM LOAD—ONE HOUR								
35.66	1349	3.156	11.30	0.592	0.00	179	69	28.863
***TEST D—ONE HOUR**								
33.64	1351	3.007	11.19	0.598	0.00	177	74	28.865
TEST E—VARYING LOAD—TWO HOURS (20 minute runs; last line average)								
33.72	1352	3.023	11.15	0.600	- --	180	75	-- ---
1.50	1505	1.211	1.24	5.400	- --	151	76	-- ---
17.68	1420	1.974	8.96	0.747	- --	174	78	-- ---
34.38	1308	3.144	10.94	0.612	- --	196	79	-- ---
9.26	1483	1.628	5.69	1.176	- --	142	79	-- ---
25.17	1403	2.512	10.42	0.642	- --	140	80	-- ---
20.45	1412	2.249	9.09	0.735	0.00	164	78	28.875

DRAWBAR HORSE POWER TESTS

H.P.	Draw bar pull Lbs.	Speed miles per hr.	Crank shaft speed R.P.M.	Slip of drive wheels %	Fuel Consumption: Gal. per hour	Fuel Consumption: Hp.-hr. per Gal.	Fuel Consumption: Lb. per Hp.-hr.	Water used Gal. per hr.	Temp. Deg. F.: Cooling med.	Temp. Deg. F.: Air	Barometer Inches of Mercury
TEST F—100% MAXIMUM LOAD— 3rd GEAR											
35.28	3122	4.24	1352	5.81	Not Recorded				174	70	28.920
TEST G—OPERATING MAXIMUM LOAD											
23.89	4692	1.91	1353	15.01	Not Recorded				165	72	28.920
33.19	4031	3.09	1347	8.46	"	"			170	71	28.917
34.02	3013	4.23	1349	5.62	"	"			172	68	28.920
33.08	2215	5.60	1350	4.17	"	"			170	70	28.922
29.25	886	12.38	1354	1.22	"	"			173	71	28.925
***TEST H—TEN HOURS— 3rd GEAR**											
27.70	2420	4.29	1350	4.40	2.658	10.42	0.642	0.00	178	73	28.791
TEST J—OPERATING MAXIMUM LOAD— 3rd GEAR											
29.63	2855	3.89	1349	14.85	Not Recorded				181	71	28.550

TIRES, WHEELS and WEIGHT

		Tests F, G & H	Test J
Rear Wheel: (each)	Type and Weight	Cast Iron	Cast Iron
	Liquid Ballast	560 lb	None
	Added Cast Iron	560 lb	None
Rear Tires:	No., Size and Ply	2 13-30 6 ply	2 13-30 6 ply
	Type of Tread	Champion Ground Grip	Champion Ground Grip
	Make	Firestone	Firestone
	Air Pressure	14 lb	12 lb
Front Wheel: (each)	Type and Weight	Pressed Steel	Pressed Steel
	Liquid Ballast	None	None
	Added Cast Iron	None	None
Front Tires:	No., Size and Ply	2 6.00-16 4 ply	2 6.00-16 4 ply
	Type of Tread	Guide Grip	Guide Grip
	Make	Firestone	Firestone
	Air Pressure	28 lb	28 lb
Height of Drawbar		19 1/2 inches	20 inches
Static Weight: Rear End		5392 lb	3152 lb
	Front End	1586 lb	1586 lb
Total Weight as Tested (With operator)		7153 lb	4913 lb

* Formerly called RATED LOAD, see horsepower summary.

FUEL, OIL and TIME Fuel: Tractor fuel, octane 41.5 (octane rating taken from oil company's typical inspection data); weight per gallon 6.688 lb. Oil: SAE 10-10W; to motor 1.729 gal; drained from motor 1.594 gal. Total time motor was operated 45 1/2 hours.

SPECIFICATIONS Type standard; Serial No. 44KS4370; Drive enclosed gear. Tread Width: Rear 54"; Front 49". Wheel Base 80". Hydraulic Lift Control not available. Advertised speeds, mph: First 2.21; Second 3.33; Third 4.43; Fourth 5.75; Fifth 12.28; Reverse 2.89. Belt Pulley: Diam 13 1/2"; Face 6 1/4"; RPM 863; Belt Speed 3050 fpm. Clutch: Make Borg & Beck; Type dry disc; Operated by foot pedal. Seat Monroe. Brakes: Make own; Type internal expanding band; Location differential shaft; Gear Reduction (brake drum to rear wheel) 5.077:1; Operated by two foot pedals; Locked by latches; Equalization none.

ENGINE Make own; Serial No. MHA260K25 025; Type 4 cylinder vertical; Head I; Mounting crankshaft lengthwise; Lubrication pressure; Bore and Stroke 3 7/8" x 5 1/2"; Rated RPM 1350; Compression Ratio 4.65:1. Port Diameter Valves: Inlet 1 5/16"; Exhaust 1 5/16". Governor: Make own; Type centrifugal, variable speed. Carburetor: Make Zenith; Model 62 AJ 10; Size 1 1/4". Starter Auto-Lite. Generator Auto-Lite. Distributor and Coil Auto-Lite. Battery Exide. Air Cleaner: Make Donaldson; Type oil washed wire screen. Oil Filter: Make Purolator; Type replaceable paper element. Cooling medium temperature control: Thermostat and shutter.

REPAIRS AND ADJUSTMENTS No repairs or adjustments.

REMARKS All test results were determined from observed data and without allowances, additions, or deductions. Tests B and F were made with carburetor set for 100% maximum belt horsepower and data from these tests were used in determining the horsepower to be developed in tests D and H, respectively. Tests C, D, E, G, H and J were made with an operating setting of the carburetor (selected by the manufacturer) of 94.5% of maximum belt horsepower.

HORSEPOWER SUMMARY

	Drawbar	Belt
1. Sea level (calculated) maximum horsepower (based on 60° F. and 29.92" Hg.)	36.85	39.45
2. Observed maximum horsepower (tests F & B)	35.28	38.11
3. Seventy-five per cent of calculated maximum drawbar horsepower and eighty-five per cent of calculated maximum belt horsepower (formerly ASAE and SAE ratings)	27.64	33.53

We, the undersigned, certify that this is a true and correct report of official tractor test No. 427.

L. F. Larsen
Engineer in Charge

C. W. Smith
F. D. Yung
L. W. Hurlbut
Board of Tractor Test Engineers